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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,454	10/12/2004	Xiao-Qi Zhou	7220206001-3222000	2358

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BINGHAM, MCCUTCHEN LLP
THREE EMBARCADERO CENTER
18 FLOOR
SAN FRANCISCO, CA 94111-4067

EXAMINER	
PENG, KUO LIANG	
ART UNIT	**PAPER NUMBER**
1712	

DATE MAILED: 08/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/511,454	ZHOU ET AL.	
	Examiner	Art Unit	
	Kuo-Liang Peng	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *1/18/05 IDS*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-64* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-64* is/are rejected.

7)☒ Claim(s) *5,9,39 and 43* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/18/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 5, 9, 39 and 43 are objected to because of the following informalities:

In Claim 9 (line 4), should "ctadecylmethylsiloxane" be -- octadecylemthylsiloxane -- as indicated in Claim 43?

In Claim 5 (line 3), Claim 9 (line 4), Claim 39 (lines 2-3) and Claim 43 (line 4), should "a combination" be -- combinations --?

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 9 and 43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claim 9, the terms "decylmethylsiloxane", "octadecylmethylsiloxane", "ctadecylmethylsiloxane" and "dimethylsiloxane" cause confusion because none of these is considered as a **poly**siloxane.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-10, 12-20, 25-44, 46-55 and 59-64 are rejected under 35 U.S.C. 102(e) as being anticipated by Matayabas (US 6 469 379).

Matayabas discloses a thermal interface composition comprising a vinyl-containing (e.g., vinyl terminated) polydiorganopolysiloxane, two Si-H containing polydiorganosiloxanes. Additives such as catalyst, inhibitors, etc. can be used.

Fillers such as copper, boron nitride, etc. can be used. (col. 3, line 19 to col. 4, line 38 and col. 5, line 66 to col. 6, line 39) The particle sizes of the fillers are described in col. 6, lines 13-22, which can be considered as micro-fillers. Since the vinyl-containing polydiorganosiloxane and the Si-H containing polydiorganosiloxane have different substituents, Examiner has a reasonable basis to believe that each has a different solubility parameter. The composition can be used for preparing integrated circuit package, etc. (col. 6, line 51 to col. 8, lines 21)

4. Claims 1-14, 16, 18-20, 22-23, 25-48, 50, 52-57 and 59-64 are rejected under 35 U.S.C. 102(b) as being anticipated by Mine (US 6 040 362).

Mine discloses a thermal interface composition comprising components A) to C). Component C) can be a platinum catalyst. (col. 2, line 5 to col. 5, line 9) Since components A) and B) have different substituents, Examiner has a reasonable basis to believe that each has a different solubility parameter. An inhibitor can be use. (col. 6, lines 23-41) Fillers such as silica, copper, etc. can be used. (col. 6, line 42 to col. 7, line 33) The composition can be used for preparing IC, etc. (col. 8, lines 21-41)

5. Claims 1-15, 17-26, 35-49 and 51-60 are rejected under 35 U.S.C. 102(b) as being anticipated by Theodore (US 4 292 225).

Theodore discloses a composition comprising a vinyl or allyl group-containing polydiorganosiloxane, a Si-H containing polydiorganosiloxane, silica and boron nitride. A platinum catalyst can be used. An inhibitor such as silicone oligomer containing alkenyl groups, quinoline, etc can be used. (col. 2, line 62 to col. 5, line 15 and Examples) Since the vinyl or allyl group-containing polydiorganosiloxane and the Si-H containing polydiorganosiloxane have different substituents, Examiner has a reasonable basis to believe that each has a different solubility parameter. A viscosity modifier (rheological modifier) can be used, which can be non-reactive (i.e., solvent). (col. 2, lines 36-58) The preambles "thermal interface composition" and "coating composition" are merely intended use, and do not carry any weight of patentability.

5. Claims 1-5, 8-10, 12-15, 17-18, 25-39, 43-44, 46-49, 51-52 and 59-64 are rejected under 35 U.S.C. 102(b) as being anticipated by Hanson (US 5 950 066).

Hanson discloses a thermal interface composition comprising a blend of polyorganosiloxane graft polymer of octadecene, a methylsiloxane host and fillers such as alumina, boron nitride, metal powders, etc. and mixtures thereof. (col. 3,

line 58 to col. 4, line 48) The particle sizes of the fillers are described in col. 4, lines 9-22. Since the polyorganosiloxane graft polymer of octadecene and methylsiloxane host have different substituents, Examiner has a reasonable basis to believe that each has a different solubility parameter.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 21, 24, 55 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matayabas.

Matayabas discloses a thermal interface composition, supra, which is incorporated herein by reference. Matayabas is silent on the use of a rheological modifier such as a solvent. However, a solvent can affect the properties of the composition such as processibility, shear modulus, etc. Therefore, it would have

been obvious to one of ordinary skilled in the art at the time of the invention was made to incorporate a solvent in the composition in order to afford a thermal interface composition with desired properties.

10. Claims 22 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matayabas in view of Mine.

Matayabas discloses a thermal interface composition, supra, which is incorporated herein by reference. Matayabas is silent on the specific catalyst set forth in the instant claims. However, Mine teaches the use of a platinum catalyst for curing a polysiloxane-based thermal interface composition. (col. 4, line 59 to col. 5, line 9) The motivation is to facilitate the curing the composition. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize Mine's platinum catalyst for curing Matayabas' composition.

11. Claims 21, 24, 55 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mine.

Mine discloses a thermal interface composition, supra, which is incorporated herein by reference. Mine is silent on the use of a rheological modifier such as a

solvent. However, a solvent can affect the properties of the composition such as processibility, etc. Therefore, it would have been obvious to one of ordinary skilled in the art at the time of the invention was made to incorporate a solvent in the composition in order to afford a thermal interface composition with desired properties.

12. Claims 21 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanson.

Hanson discloses a thermal interface composition, supra, which is incorporated herein by reference. Hanson is silent on the use of a rheological modifier. However, Hanson teaches the viscosity is important. (col. 4, lines 9-22) Furthermore, a rheological modifier can affect the viscosity of the composition. Therefore, it would have been obvious to one of ordinary skilled in the art at the time of the invention was made to incorporate a rheological modifier in the composition in order to afford a thermal interface composition with desired viscosity.

13. Claims 16 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanson in view of Matayahas'731 (US 2003/0168731).

Hanson discloses a thermal interface composition comprising metal powders, supra, which is incorporated herein by reference. Hanson is silent on the specific use of copper. However, Matayahas'731 teaches the use of copper in a thermal interface composition.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuo-Liang Peng whose telephone number is (571) 272-1091. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-

direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

klp
August 16, 2006

Kuo-Liang Peng
Primary Examiner
Art Unit 1712